



THE CITY UNIVERSITY
OF NEW YORK

College of
Staten Island



Computer Science

Undergraduate and Graduate Programs

The 21st century is here in full swing, and we are engulfed by new and exciting technologies. Smartphones, social media, and incredibly large storage devices all add to our already fast computers to make our home and work environments more exciting than ever before.

Computer Science, Information Systems design, software & hardware engineering, database design, security specialization, artificial intelligence and data science are all exciting, high-demand careers in our evolving society.

The Computer Science Department provides the foundation to pursue opportunities for a meaningful, rewarding, and impactful career in industry or scholarship in the continuously advancing field of Computer Science.

Students can choose from among several cutting-edge degrees including:

- Associate in Applied Science (AAS) in Computer Technology
- Bachelor of Science (BS) in Computer Science
- BS in Computer Science and Mathematics, (offered with the Mathematics Department)
- Master of Science (MS) and PhD program in Computer Science.
- BS in Information and Informatics

AAS in Computer Technology

The AAS in Computer Technology program focuses on *applications programming*. Students have the choice of two unique concentration sequences—*Programming or Information Science*.

Programming Sequence: Introduces the foundations of programming to prepare for further study in the Bachelor's degree in Computer Science.

Information Science Sequence: Teaches the founda-

FACTS IN BRIEF

Left: Computer Science graduates attending Commencement receive their diplomas.

tions of programming while introducing the key elements of business, marketing and management.

BS in Computer Science

The Computer Science Bachelor's program is accredited by the Computer Accreditation Commission (CAC) of ABET.

The four-year Computer Science degree is a rigorous and broad-based curriculum that prepares students for careers as computer professionals and/or for graduate study. The major includes courses in software development, hardware and networks, along with electives such as database design, artificial intelligence, network security, game development and high-performance computing.

The program offers a balance of theoretical and applied software and hardware courses. Within software design, we stress an *object-oriented* approach with user interface development and testing. In addition to classic switching theory and architecture, students build and test hardware components.

Faculty in the Computer Science department are engaged in active research. Students have the opportunity to join ongoing projects and gain research experience, as well as participate in tech-related workshops and career development events at CSI, through involvement with our vibrant and active student organizations.

BS in Computer Science and Mathematics

In today's world, advanced computational modeling plays a critical role in solving many complex math problems; specialized computer scientists with training in advanced math are becoming crucial players in the development of sophisticated hardware and software. The intersection of Mathematics and Computer Science is expanding—and students who gain competence and credentials in both will undoubtedly enjoy many professional advantages.

BS in Information Systems and Informatics

The degree provides students with core business and technical competencies to traverse the boundary between management and computer information technology. Students learn to design, develop, and implement state-of-the-art information systems to support managerial decision making, statistical modeling, and advanced analytics.

Earning Potential:

The array of occupations open to a student with a degree in Computer Science is vast and among some of the most rewarding and engaging careers available today. Whether working for a major corporation or in an entrepreneurial pursuit, Computer Science majors often have the opportunity for flexibility and to design a lifestyle of their dreams.

Exciting, high-demand careers in the field of Computer Science include information systems design, software and hardware development, database design, cyber-security and network administration.

ACCREDITED:



BS SPECIALIZATIONS

Game Development

- CSC 227 Introduction to Game Programming
- CSC 427 Advanced Game Development
- CSC 480 Artificial Intelligence or
- CSC 470 Computer Graphics

Network and Security

- CSC 223 Computer Hacking Revealed
- CSC 421 Internet Data Communications
- CSC 436 Advanced Data Communications or
- CSC 426 Applied Cryptography

High Performance Computing

- CSC 229 Introduction to High Performance Computing
- CSC 429 Advanced High Performance Computing
- CSC 425 Shared Memory Parallel Computing or
- MTH 338 Linear Algebra



A new Interdisciplinary Computational Science Research Center (on right) is slated to be built on the north side of campus.

2018 AVERAGE ANNUAL SALARIES

BS IN COMPUTER SCIENCE	
Computer Programmer	\$56,877
Web Developer	\$58,986
Software Developers	\$66,549
Systems Analysts	\$67,333
Database Administrator	\$77,363
Software Engineer	\$79,000
Data Scientist	\$89,326
Development Operations (DevOps) Engineer	\$91,120
Solutions Architect.....	\$115,908
Product Manager, Software	\$100,628

*payscale.com November 2018

The High Performance Computing Center (HPCC)

The HPCC operates six computer systems as described below:

“**SALK**” is a Cray XE6m with a total of 2816 processor cores. Salk is reserved for large parallel jobs, particularly those requiring more than 64 cores.

“**KARLE**” is a Dell shared memory system with 24 processor cores. *Karle* is used for serial jobs, Matlab, SAS, parallel Mathematica, and certain ARView jobs.

“**PENZIAS**” is a cluster with 1,152 Intel Sandy Bridge cores each with 4 Gbytes of memory. It is used for applications requiring up to 128 cores. It also supports 136 NVIDIA Kepler K20 accelerators.

“**ANDY**” is an SGI cluster with 744 processor cores and 96 NVIDIA Fermi processor accelerators. *Andy* is for jobs using 64 cores or fewer, for jobs using the NVIDIA Fermis, and for Gaussian jobs.

“**APPEL**” APPEL is a SGI UV300 with 384 cores and 12 terabytes of shared memory—a system nicely configured to solve problems in computational group theory.

“**CHIZEN**” is the system that is used as a gateway to the above HPCC systems. It is not used for computations.

4+1 BS/MS in Computer Science

Computer Science Graduate Course Double-Counting Policy

Computer Science majors may be granted permission to take up to three additional graduate courses at undergraduate tuition to be counted towards their Bachelor’s degree.

These courses may be used only to substitute for 400-level Computer Science elective courses (CSC designation). These graduate courses will be double-counted toward their Master’s degree. This allows students to earn both the Bachelor’s and the Master’s degrees in five years.

Program Educational Criteria:

- Current enrollment in bachelor’s degree in Computer Science or Computer Science/Mathematics at CSI and successful completion of three years of study with 90 or more earned credits.
- Cumulative GPA of 3.30 or above.
- Two letters of recommendation, at least one from a full time CSI Computer Science faculty, under whom the applicant has studied.
- Permission from the course instructor, the coordinator of the graduate program, and the department chairperson.
- Application for admission and conditional acceptance to the Computer Science graduate program.
- All graduate elective courses can be taken as double-counting courses, except the required core courses: CSC 716, CSC 727, CSC 740 and CSC 770.

General Education Requirements: 42–45 credits • Major Requirements: 86–92* credits • Total Credits Required: 124

*19–20 credits required for the Major also satisfy general education requirements

Graduate Studies in Computer Science

Graduate Coordinator: Xiowen Zhang, Ph.D., Associate Professor • xiowen.zhang@csi.cuny.edu • 718-982-3262

Our Master’s degree in Computer Science is designed to teach practical yet complex technologies in this rapidly evolving and challenging discipline. It serves those who wish to increase their professional competence for business, industry, and research and development laboratories, as well as for those students who wish to enter careers in research and teaching. Students may continue in Doctoral programs in Computer Science, including the CUNY Graduate Center program.

MS SPECIALIZATIONS

- Artificial Intelligence and Data Analytics
- Cloud Computing and Software Engineering
- Cybersecurity and Networks

Students can earn all the way from an Associate’s through a Doctoral degree in Computer Science at the College of Staten Island.

Department of Computer Science • Building 1N, Room 215

Chairperson: Shuqun Zhang, Ph.D., Professor • shuqun.zhang@csi.cuny.edu • 718-982-3178

To reach the Computer Science office, please call 718-982-2850 and ask to speak with an available advisor.